

## A.7 CALIFORNIA BLACK RAIL (*LATERALLUS JAMAICENSIS COTURNICULUS*)

### A.7.1 Legal and Other Status

The California black rail (*Laterallus jamaicensis coturniculus*) is listed as a threatened species under the California Endangered Species Act. Prior to its listing as a state threatened species in 1971, it was designated as a Fully Protected species in California. It currently retains status as both a state threatened and state fully protected species.



photo courtesy Ed Harper

The California black rail has no federal regulatory status; however, it is on the USFWS Region 1 list of Birds of Conservation Concern (BCC). BCC species are those that the USFWS considers potential candidates for federal listing.

### A.7.2 Species Distribution and Status

#### A.7.2.1 Range and Status

The California black rail is one of two subspecies of black rail that inhabit North America. The range of the California black rail extends throughout portions of California and Arizona.



Eastern black rail (*Laterallus jamaicensis jamaicensis*) is found along the eastern seaboard, along the Gulf Coast, and rarely at inland sites in the Midwest (Eddleman et al. 1994).

The historical range of the black rail in California extended from the San Francisco Bay, throughout the Sacramento-San Joaquin Delta, along the coast to northern Baja California, other Southern California locales such as the Salton Sea, and along the lower Colorado River. Loss of tidal marsh habitat has extirpated populations from much of its coastal range, particularly in Southern California and much of the San Francisco Bay. The species persists in remaining tidal marshes in the northern San Francisco Bay estuary, Tomales Bay, Bolinas Lagoon, Sacramento-San Joaquin

Delta, Morro Bay, the Salton Sea, and the Lower Colorado River (Manolis 1978, Evens et al. 1991, Eddleman et al. 1994). The species has also been found more recently at about 100 freshwater sites in the Sierra Nevada foothills in Butte, Yuba, and Nevada Counties (Richmond et al. 2010, Tecklin 1999, Aigner et al. 1995). Additional detections have been made recently at the Cosumnes River Preserve in South Sacramento County and Bidwell Park in Chico, Butte County (Central Valley Bird Club Site Guides).

Evens et al. (1991) examined relative abundance of rails at various locations within the species' range and determined that more than 80 percent of the remaining population is confined to the northern reaches of the San Francisco Bay estuary. They also determined that the species was subject to continuing and ongoing population decline due to habitat loss and/or degradation.

### **A.7.2.2 Distribution and Status in the Plan Area**

Until 1994, the black rail was unknown from the Sacramento Valley or Sierra foothills, except for a single winter record at the California Department of Fish and Game's (DFG) Gray Lodge Wildlife Area in Butte County. In 1994, a population of the rail was found occupying a freshwater marsh at the University of California's Sierra Field Station in Yuba County (Aigner et al. 1995). Further examination revealed that the species could be breeding at four separate freshwater marsh ponds within approximately 4 miles (6 kilometers) of each other. As a result, DFG provided funding for a more regional survey effort that resulted in observation of additional occurrences in Butte, Yuba, and Nevada Counties (Tecklin 1999). Since then, the University of California has continued with a study, the California Black Rail Study Project, that continues to locate additional subpopulations in their Sierra Nevada foothill study area and that is examining how each of these isolated subpopulations are functioning as a metapopulation.

As of 2005, this ongoing study included 168 wetland sites in their sample, with 54 percent of these occupied by black rails (The California Black Rail Project 2005). Richmond et al. (2010) note 158 emergent wetland sites where black rails have been detected at least once since their surveys began in 2002, the majority with irrigation canals as their primary water source. These populations, and presumably others that remain undetected in the region, are considered to be year-round residents. Up to 12 locations of black rails have been verified for Butte County (Richmond et al. 2008). Known populations within Butte County are located just north of La Porte Road southeast of Oroville (Figure A.7-1, *California Black Rail Recorded Occurrences*). Given the geographic extent of this metapopulation and the consistently high occupancy rate detected over the last five years, it is likely that additional subpopulations occur further north and possibly west into Butte County. Additional recent occurrences of California black rail are reported from seep spring sites in the eastern foothills of the Plan Area (P. Johnson and S. Huber pers. comm.), including sites at Upper Bidwell Park, Butte Creek Canyon, and at the Base of Table Mountain; in emergent marsh at the BCAG/Caltrans mitigation project site at the intersection of Highways 70 and 149; and a possible detection near the picnic grounds of Thermalito Forebay (J. Sterling pers. comm.) (Figure A.7-1).

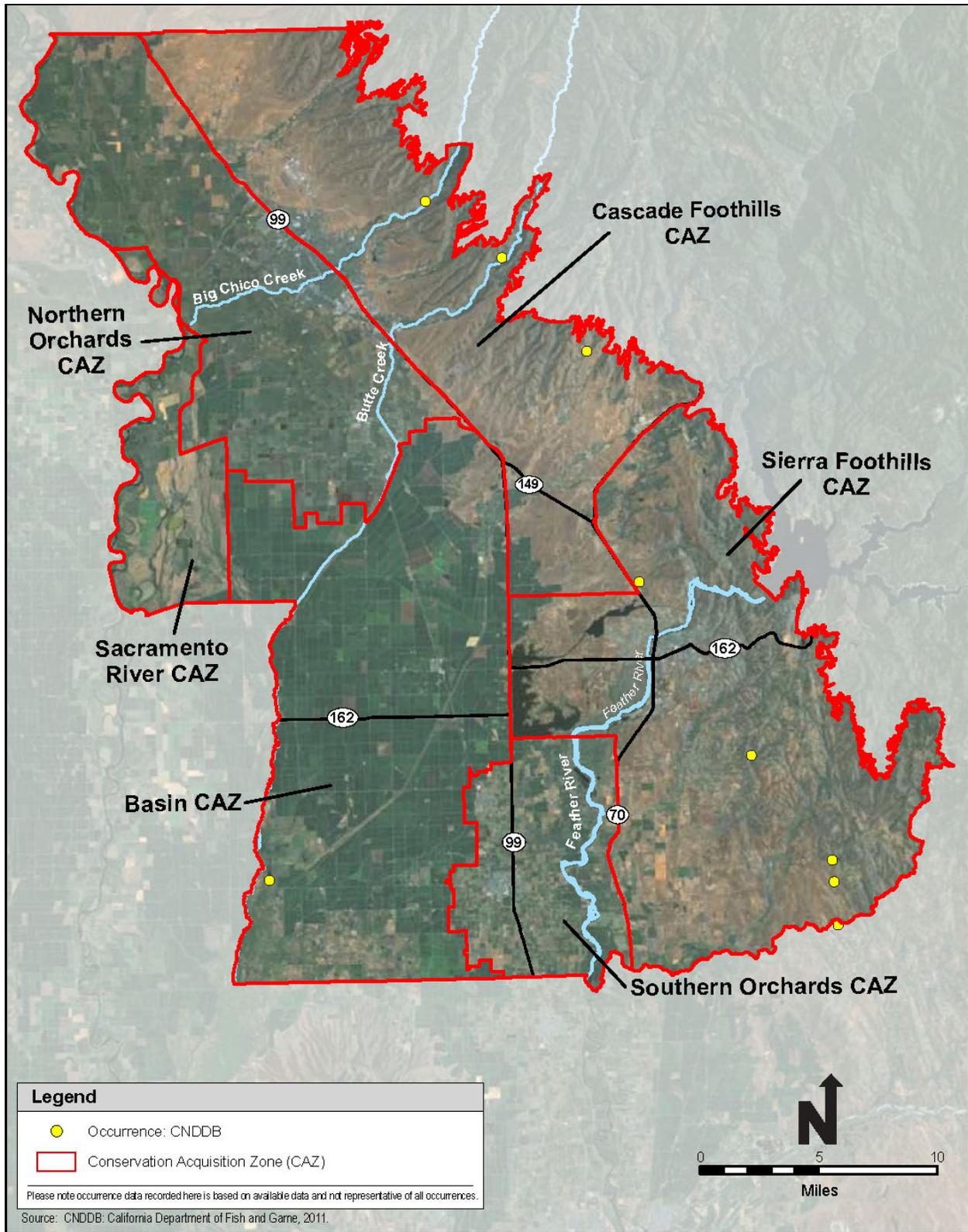


Figure A.7-1. California Black Rail Recorded Occurrences

### **A.7.3 Habitat Requirements and Special Considerations**

California black rails inhabit saltwater, brackish, and freshwater marshes. A highly secretive and rarely observed bird, there appears to be a preference in coastal areas for tidal salt marshes dominated by dense pickleweed (*Salicornia* spp.) with an open structure below. This provides a dense canopy for protective cover while providing nesting habitat and accessibility below the canopy (Evens and Page 1983). Rails are susceptible to predation by herons, egrets, Northern harriers, short-eared owls, and several mammalian species. A dense canopy that provides optimal cover is essential for survival.

Freshwater marshes, including occupied sites in the Plan Area, are typically densely vegetated and dominated by emergent plant species, such as *Typha latifolia*, *T. domingensis*, *Juncus effusus*, *J. balticus*, *Scirpus acutus*, *Paspalum dilatatum*, *Epilobium ciliatum*, *Leersia oryzoides*, and *Eleocharis macrostachya* (Richmond et al. 2008). These sites are very shallow (usually less than 3 centimeters) but require a perennial water source. A relatively narrow range of conditions is required for occupancy and successful breeding. Too much water will prevent nesting and too little water will lead to abandonment of the site until the water source is reestablished. Patch sizes of occupied wetlands are typically small and range from 0.2 to 35 acres (Richmond et al. 2008). Black rails in the Sierra Nevada foothills are positively associated with larger emergent wetlands, flowing water, dense vegetation, and irrigation water as a primary source (Richmond et al. 2010).

### **A.7.4 Life History**

#### **A.7.4.1 Seasonal Patterns**

Populations within the study area are thought to be year-round residents. Very little information is available on seasonal patterns, timing of reproduction, dispersal, or other activities. The breeding season begins as early as February with pair formation. Egg-laying peaks around May 1, with a 17- to 20-day incubation period (Eddleman et al. 1994). Although rails are considered year-round residents in the Sierra Nevada foothills, seasonal movements including juvenile dispersal and adult relocation to other wetland breeding sites occur each year sometime during the nonbreeding season between approximately August and February.

#### **A.7.4.2 Nest Site Selection**

Factors influencing nest site selection include size of wetland, cover density, wetland species composition, water levels, and food availability. Nests are concealed in dense vegetation and consist of a small, deep, loose cup of woven reeds or grasses and built at ground level or several inches above the ground.

### **A.7.4.3 Reproduction**

Rails in California usually lay one single brood with an average clutch size of six eggs (range = 3 to 8) (Eddleman et al. 1994). Both adults apparently incubate the eggs (Flores and Eddleman 1993); however, there is very limited data. No information is available on length of brooding period, timing of fledging, parental care, or reproductive success.

### **A.7.4.4 Foraging Behavior and Diet**

Very little information is available on foraging behavior, but the black rail is assumed to be an opportunistic daytime feeder. Black rails forage exclusively within the wetland habitat, presumably on or near substrate at edges of emergent vegetation (Eddleman et al. 1994). Diet consists of insects, small mollusks, amphipods and other invertebrates, and some seeds.

## **A.7.5 Threats**

Throughout its range, the primary threat to the California black rail is the loss and fragmentation of habitat from urbanization, flood control projects, agricultural practices, and hydrologic changes that affect water regimes. The most significant historical threat was the draining of tidal marshes, which may be responsible for over 90 percent the population declines of this species, and which is still occurring in some areas, albeit at a slower rate.

Within the Plan Area, agricultural practices, livestock grazing, and urbanization may threaten individual subpopulations. Use of pesticides, including those used for mosquito control programs may also have unintended consequences for black rails. These isolated subpopulations are also susceptible to metapopulation dynamics and stochastic variables (Evens et al. 1991).

Other potential threats include increased predation by domestic cats and by native predators as a result of hydrologic and vegetation changes that increase susceptibility of predation; pollution and its effect on freshwater marshes; and collision with automobiles and utility lines.

## **A.7.6 Relevant Conservation Efforts**

Regional conservation efforts have focused on the development and implementation of habitat conservation plans/natural community conservation plans. Such regional conservation approaches can be an effective tool to manage and sustain black rail populations if they protect sufficient suitable and occupied habitat. California black rail is a covered species or a proposed covered species in several regional conservation plans in the Central Valley region of California. These include the Placer County Conservation Plan, the San Joaquin County Multi-species Habitat Conservation and Open Space Plan, the Solano County Multispecies Habitat Conservation Plan, the Yolo County Natural Heritage Program Plan, and the Bay Delta Conservation Plan. Several management plans have outlined threats to California black rails and provided recommendations for conservation (Trulio and Evens 2000). Recommendations focus

primarily on protection of high-quality habitats. However, few actual habitat protection or species conservation efforts specific to the California black rail have been undertaken to date.

### **A.7.7 Species Habitat Suitability Model**

A habitat suitability model has not been developed for California black rail because there is insufficient information regarding the distribution of the physical attributes that supports its habitat in the Plan Area (e.g., the location of seeps, water depths in emergent wetlands).

### **A.7.8 Recovery Plan Goals**

A recovery plan has not been prepared for the California black rail and recovery goals have not been established for the species.

### **A.7.9 References**

#### **Literature Cited**

- Aigner, P., J. Tecklin, and C. Koehler. 1995. Probable Breeding Population of the Black Rail in Yuba County, CA. *Western Birds* 26:157–160.
- CNDDDB (California Natural Diversity Database). 2011. California Department of Fish and Game, Sacramento, CA.
- DFG (California Department of Fish and Game). 2007. Public website with wildlife species range maps. <http://www.dfg.ca.gov/whdab/html/cawildlife.html>.
- Eddleman, W. R., R. E. Flores, and M. L. Legare. 1994. Black Rail (*Laterallus jamaicensis*). In *The Birds of North America* No. 123, edited by A. Poole and F. Gill. Philadelphia: The Academy of Natural Sciences and Washington, DC: The American Ornithologists' Union.
- Evens, J. G., and G. W. 1983. *The Ecology of Rail Populations at Corte Madera Ecological Preserve*. Final report to Main Audubon Society at Point Reyes Bird Observatory.
- Evens, J. G., G. W. Page, S. A. Laymon, and R. W. Stallcup. 1991. Distribution, Relative Abundance, and Status of the California Black Rail in Western North America. *Condor* 93:952–966.
- Flores, R. E. and W. R. Eddleman. 1993. Nesting Biology of the California Black Rail in Southwestern Arizona. *Western Birds* 24:81–88.
- Manolis, T. 1978. Status of the Black Rail in Central California. *Western Birds* 9:151–158.

Richmond, O.M., J. Tecklin, and S.R. Beissinger. 2008. Distribution of California black rails in the Sierra Nevada foothills. *Journal of Field Ornithology* 79: 381-390.

Richmond, O. M. W., S. K. Chen, B. B. Risk, J. Tecklin, and S. R. Beissinger. 2010. California Black Rails Depend on Irrigation-Fed Wetlands in the Sierra Nevada Foothills. *California Agriculture* 64:85–93.

Tecklin, J. 1999. *Distribution and Abundance of the California Black Rail (Laterallus jamaicensis coturniculus) in the Sacramento Valley Region with Accounts of Ecology and Call Behavior of the Subspecies*. Draft. Contract Nos. FG6154WM and FG6154-1WM. Prepared for the California Department of Fish and Game.

The California Black Rail Project. 2005. *The California Black Rail Report: A newsletter for landowners cooperating with the California Black Rail Study Project* 4:1.

Trulio, L. A., and J. G. Evens. 2000. California black rail. Pages 341–345 in P. R. Olofson (ed.). Goals Project. *Baylands Ecosystem Species and Community Profiles: Life histories and Environmental Requirements of Key Plants, Fish and Wildlife*. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board, Oakland, CA.

### **Personal Communications**

Phil Johnson and Scott Huber, Altacal Audubon members, meeting with Altacal Audubon, May 10, 2007.

John Sterling, H.T. Harvey Associates (formerly), email exchange with Jim Estep, May 18, 2007.

*This page is intentionally left blank.*